



IFW16

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/051,644C

DATE: 10/01/2004

TIME: 11:08:15

Input Set : A:\Cam-0121.app

Output Set: N:\CRF4\10012004\J051644C.raw

3 <110> APPLICANT: Liu, et al.
 5 <120> TITLE OF INVENTION: Screens and Assays for Agents Useful in Controlling
 6 Parasitic Nematodes
 8 <130> FILE REFERENCE: 2002630-0012
 10 <140> CURRENT APPLICATION NUMBER: 10/051,644C
 11 <141> CURRENT FILING DATE: 2002-01-18
 13 <160> NUMBER OF SEQ ID NOS: 8
 15 <170> SOFTWARE: PatentIn Ver. 2.1
 17 <210> SEQ ID NO: 1
 18 <211> LENGTH: 425
 19 <212> TYPE: PRT
 20 <213> ORGANISM: Artificial Sequence
 22 <220> FEATURE:
 23 <223> OTHER INFORMATION: Description of Artificial Sequence:VAP-1 Amino
 24 Acid Sequence
 26 <400> SEQUENCE: 1
 27 Met Ala Val Leu Ala Val Val Leu Leu Leu Ala Cys Leu Glu Arg Ala
 28 1 5 10 15
 30 Val Ala Gln Thr Phe Gly Cys Ser Asn Thr Lys Ile Asn Asp Gln Ala
 31 20 25 30
 33 Arg Lys Met Phe Tyr Asp Ala His Asn Asp Ala Arg Arg Ser Met Ala
 34 35 40 45
 36 Lys Gly Leu Glu Pro Asn Lys Cys Gly Leu Leu Ser Gly Gly Lys Asn
 37 50 55 60
 39 Val Tyr Glu Leu Asn Trp Asp Cys Glu Met Glu Ala Lys Ala Gln Glu
 40 65 70 75 80
 42 Trp Ala Asp Gly Cys Pro Ser Ser Phe Gln Thr Phe Asp Pro Thr Trp
 43 85 90 95
 45 Gly Gln Asn Tyr Ala Thr Tyr Met Gly Ser Ile Ala Asp Pro Leu Pro
 46 100 105 110
 48 Tyr Ala Ser Met Ala Val Asn Gly Trp Trp Ser Glu Ile Arg Thr Val
 49 115 120 125
 51 Gly Leu Thr Asp Pro Asp Asn Lys Tyr Thr Asn Ser Ala Met Phe Arg
 52 130 135 140
 54 Phe Ala Asn Met Ala Asn Gly Lys Ala Ser Ala Phe Gly Cys Ala Tyr
 55 145 150 155 160
 57 Ala Leu Cys Ala Gly Lys Leu Ser Ile Asn Cys Ile Tyr Asn Lys Ile
 58 165 170 175
 60 Gly Tyr Met Thr Asn Ala Ile Ile Tyr Glu Lys Gly Asp Ala Cys Thr
 61 180 185 190
 63 Ser Asp Ala Glu Cys Thr Thr Tyr Ser Asp Ser Gln Cys Lys Asn Gly
 64 195 200 205
 66 Leu Cys Tyr Lys Ala Pro Gln Ala Pro Val Val Glu Thr Phe Thr Met

ENTERED

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/051,644C

DATE: 10/01/2004

TIME: 11:08:15

Input Set : A:\Cam-0121.app

Output Set: N:\CRF4\10012004\J051644C.raw

67 210 215 220
 69 Cys Pro Ser Val Thr Asp Gln Ser Asp Gln Ala Arg Gln Asn Phe Leu
 70 225 230 235 240
 72 Asp Thr His Asn Lys Leu Arg Thr Ser Leu Ala Lys Gly Leu Glu Ala
 73 245 250 255
 75 Asp Gly Ile Ala Ala Gly Ala Phe Ala Pro Met Ala Lys Gln Met Pro
 76 260 265 270
 78 Lys Leu Val Lys Tyr Ser Cys Thr Val Glu Ala Asn Ala Arg Thr Trp
 79 275 280 285
 81 Ala Lys Gly Cys Leu Tyr Gln His Ser Thr Ser Ala Gln Arg Pro Gly
 82 290 295 300
 84 Leu Gly Glu Asn Leu Tyr Met Ile Ser Ile Asn Asn Met Pro Lys Ile
 85 305 310 315 320
 87 Gln Thr Ala Glu Asp Ser Ser Lys Ala Trp Trp Ser Glu Leu Lys Asp
 88 325 330 335
 90 Phe Gly Val Gly Ser Asp Asn Ile Leu Thr Gln Ala Val Phe Asp Arg
 91 340 345 350
 93 Gly Val Gly His Tyr Thr Gln Met Ala Trp Glu Gly Thr Thr Glu Ile
 94 355 360 365
 96 Gly Cys Phe Val Glu Asn Cys Pro Thr Phe Thr Tyr Ser Val Cys Gln
 97 370 375 380
 99 Tyr Gly Pro Ala Gly Asn Tyr Met Asn Gln Leu Ile Tyr Thr Lys Gly
 100 385 390 395 400
 102 Ser Pro Cys Thr Ala Asp Ala Asp Cys Pro Gly Thr Gln Thr Cys Ser
 103 405 410 415
 105 Val Ala Glu Ala Leu Cys Val Ile Pro
 106 420 425
 109 <210> SEQ ID NO: 2
 110 <211> LENGTH: 1341
 111 <212> TYPE: DNA
 112 <213> ORGANISM: Artificial Sequence
 114 <220> FEATURE:
 115 <223> OTHER INFORMATION: Description of Artificial Sequence:VAP-1 cDNA
 116 Nucleotide Sequence
 118 <400> SEQUENCE: 2
 119 atggcggtat tagcagtgg actacttcta gcatgcctgg agagagcggt tgcacagacg 60
 120 ttccggctgct ctaacaccaa gatcaatgac caggctcgta agatgttcta ttagtgcac 120
 121 aatgatgcaa gacgaagcat ggctaaaggg cttgagccaa acaagtgcgg actcttatct 180
 122 ggtggaaaga atgttatga attgaattgg gattgcgaga tggaaagcaaa agtcaggaa 240
 123 tgggcagacg gatgtcccag ctcttccag acatttgatc caacatgggg gcagaactac 300
 124 gcgacgtaca tggatcgat tgctgatccg cttccatacg cttccatggc tggtaatggg 360
 125 tggtggtcg aaattagaac cgtaggactt acggatcctg ataacaagta cactaacagt 420
 126 gcaatgttcc gatttgctaa tatggcaaat ggtaaagctt cagctttgg atgtgcatac 480
 127 gcgttgcg caggaaaact atccatcaat tgcattaca acaagatagg atacatgacc 540
 128 aatgctatca tttatgaaaa aggagatgcc tgtaccagt acgctgaatg caccacctac 600
 129 tcagactcac aatgcaaaaa cggtcttgc tataaggcac ctcaagctcc agtcgttgag 660
 130 actttcacaa tggcccttc ggtcacggac cagtcggatc aggcgcgtca aaacttcttg 720
 131 gacacccata acaaattgcg tacaagcctt gccaaaggac ttgaagctga tggaaattgcc 780
 132 gctggagcat ttgcaccaat ggccaagcaa atgccaaaac tggtaaaata cagctgcaca 840

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/051,644C

DATE: 10/01/2004
TIME: 11:08:15

Input Set : A:\Cam-0121.app
Output Set: N:\CRF4\10012004\J051644C.raw

133 gttgaagcaa acgccagaac atgggcaaaa ggatgcctt accagcattc aacaagcgca 900
 134 cagagaccag gactcggta aaatcttat atgatcagca ttaacaacat gcctaaaatt 960
 135 caaaccgcgg aggactcctc aaaggcttg tggccgagt tgaaagactt cgaggatcggt 1020
 136 tctgacaaca ttctgaccca agcagtttt gatcgtggcg ttggacatta cacacaaatg 1080
 137 gcatggaaag gaactactga aattggatgt ttttgtggaga attgtccaac attcaattat 1140
 138 tccgtatgcc aatatggcc agcgggaaac tacatgaacc aactaatcta tbeccaaggc 1200
 139 tcaccatgca cagctgacgc cgattgcca ggaaccaga catgcagtgt cgctgaagca 1260
 140 ttatgtgtta tcccttagta aattttctat gcaactctt gaaagtctata ataaatatgc 1320
 141 aaaaattaaa aaaaaaaaaa a 1341
 144 <210> SEQ ID NO: 3
 145 <211> LENGTH: 473
 146 <212> TYPE: PRT
 147 <213> ORGANISM: Artificial Sequence
 149 <220> FEATURE:
 150 <223> OTHER INFORMATION: Description of Artificial Sequence:VAP-2 Amino Acid Sequence
 151
 153 <400> SEQUENCE: 3
 154 Met Asn Val Val Leu Ser Ala Val Thr Leu Phe Leu Ile Phe Arg Tyr
 155 1 5 10 15
 157 Ala Gln Thr Val Asn Ile Glu Gly Ser Gly Gly Asn Asp Glu Leu Leu
 158 20 25 30
 160 Glu Gln Asn Val Trp Asn Asp Val Asp Asp Lys Val Val Glu Ala Leu
 161 35 40 45
 163 Gly Gly Leu Asp Asp Glu Leu Leu Thr Glu His Val Cys Asn Lys Ser
 164 50 55 60
 166 Thr Ile Thr Gln Leu Gln Glu Ile Ile Leu Thr Thr His Asn Glu
 167 65 70 75 80
 169 Leu Arg Arg Ser Leu Ala Phe Gly Lys Gln Arg Asn Lys Arg Gly Leu
 170 85 90 95
 172 Met Asn Gly Ala Arg Asn Met Tyr Lys Leu Asp Trp Asp Cys Glu Leu
 173 100 105 110
 175 Ala Ser Leu Ala Ala Asn Trp Ser Thr Ser Cys Pro Gln His Phe Met
 176 115 120 125
 178 Pro Gln Ser Val Leu Gly Ser Asn Ala Gln Leu Phe Lys Arg Phe Tyr
 179 130 135 140
 181 Phe Tyr Phe Asp Gly His Asp Ser Thr Val His Met Arg Asn Ala Met
 182 145 150 155 160
 184 Lys Tyr Trp Trp Gln Gln Gly Glu Glu Lys Gly Asn Glu Asp Gln Lys
 185 165 170 175
 187 Asn Arg Phe Tyr Ala Arg Arg Asn Tyr Phe Gly Trp Ala Asn Met Ala
 188 180 185 190
 190 Lys Gly Lys Thr Tyr Arg Val Gly Cys Ser Tyr Ile Met Cys Gly Asp
 191 195 200 205
 193 Gly Glu Ser Ala Leu Phe Thr Cys Leu Tyr Asn Glu Lys Ala Gln Cys
 194 210 215 220
 196 Glu Lys Glu Met Ile Tyr Glu Asn Gly Lys Pro Cys Cys Glu Asp Lys
 197 225 230 235 240
 199 Asp Cys Phe Thr Tyr Pro Gly Ser Lys Cys Leu Val Pro Glu Gly Leu
 200 245 250 255

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/051,644C

DATE: 10/01/2004
TIME: 11:08:15

Input Set : A:\Cam-0121.app
Output Set: N:\CRF4\10012004\J051644C.raw

202 Cys Gln Ala Pro Ser Met Val Lys Asp Asp Gly Gly Ser Phe Gln Cys
 203 260 265 270
 205 Asp Asn Ser Leu Val Ser Asp Val Thr Arg Asn Phe Thr Leu Glu Gln
 206 275 280 285
 208 His Asn Phe Tyr Arg Ser Arg Leu Ala Lys Gly Phe Glu Trp Asn Gly
 209 290 295 300
 211 Glu Thr Asn Thr Ser Gln Pro Lys Ala Ser Gln Met Ile Lys Met Glu
 212 305 310 315 320
 214 Tyr Asp Cys Met Leu Glu Arg Phe Ala Gln Asn Trp Ala Asn Asn Cys
 215 325 330 335
 217 Val Phe Ala His Ser Ala His Tyr Glu Arg Pro Asn Gln Gly Gln Asn
 218 340 345 350
 220 Leu Tyr Met Ser Ser Phe Ser Asn Pro Asp Pro Arg Ser Leu Ile His
 221 355 360 365
 223 Thr Ala Val Glu Lys Trp Trp Gln Glu Leu Glu Glu Phe Gly Thr Pro
 224 370 375 380
 226 Ile Asp Asn Val Leu Thr Pro Glu Leu Trp Asp Leu Lys Gly Lys Ala
 227 385 390 395 400
 229 Ile Gly His Tyr Thr Gln Met Ala Trp Asp Arg Thr Tyr Arg Leu Gly
 230 405 410 415
 232 Cys Gly Ile Ala Asn Cys Pro Lys Met Ser Tyr Val Val Cys His Tyr
 233 420 425 430
 235 Gly Pro Ala Gly Asn Arg Lys Asn Asn Lys Ile Tyr Glu Ile Gly Asp
 236 435 440 445
 238 Pro Cys Glu Val Asp Asp Cys Pro Ile Gly Thr Asp Cys Glu Lys
 239 450 455 460
 241 Thr Thr Ser Leu Cys Val Ile Ser Lys
 242 465 470
 245 <210> SEQ ID NO: 4
 246 <211> LENGTH: 1422
 247 <212> TYPE: DNA
 248 <213> ORGANISM: Artificial Sequence
 250 <220> FEATURE:
 251 <223> OTHER INFORMATION: Description of Artificial Sequence:VAP-2 cDNA
 252 Nucleotide Sequence
 254 <400> SEQUENCE: 4
 255 atgaacgtgg tccttccgc tgcactttttttttatgc gcagactgtg 60
 256 aatatagaag gcagtggagg aaatgtatgag ctcttgagc agaacgtgtg gaacgtatgt 120
 257 gacgacaagg ttgttagaagc acttgggtgt ctgtatgtatg aactgttaac cgaacatgtg 180
 258 tgtaacaaat caacgatcac tcagctacag caggagatca tcttgacaac ccacaatgaa 240
 259 ttacgaagat cattggctt cggaaagcaa agaaaacaaga gaggtctcat gaacgggtcg 300
 260 agaaaatatgt ataaactgga ttgggattgt gaactggcat cacttgccgc caattggtca 360
 261 acctcctgcc ctcagcactt tatgcccaca tcggactttt gctccaacgc tcagcttttt 420
 262 aagcgtttct atttttatgt tgatgggcac gactctactg tacatatgcg aaacgcgtatg 480
 263 aagtatttgtt ggcagcaagg tgaagaaaaa ggcaatgagg atcagaaaaa tagattctat 540
 264 gccagacgaa attatttgg atgggcaaac atggcaaaag gaaaaacata tcgagttgga 600
 265 tgctcgtata ttatgtgcgg cgacgggtgaa tctgcacttt tcacttgct ttataacgaa 660
 266 aaagccccat gcgaaaaaga aatgatttac gaaaatggaa aaccctgctg tgaggataaa 720
 267 gactgtttca catatccagg atcaaaatgt ttagtacctg aaggattatg tcaagcacct 780

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/051,644C

DATE: 10/01/2004
TIME: 11:08:15

Input Set : A:\Cam-0121.app
Output Set: N:\CRF4\10012004\J051644C.raw

268 tctatggtaa aggatgatgg aggaagttc caatgtata actcccttgt gtcagatgtc 840
 269 acccgcaatt tcacttgg a gcaacacaat ttttagat ctcgtcttgc aaaaggttt 900
 270 gaatggaatg gagaaacaaa cacttccag ccaaaggcta gtcaa atgat caaaatggag 960
 271 tatgactgca tggttggaa acg gtttgcacaa aactgggca a ataattgcgt tttgcacac 1020
 272 tcggcacatt acgaaagacc gaatcagggt cagaatctt acatgagttc tttctcaa ac 1080
 273 cctgatccta gaaggcttat acatacggcc gtcgagaagt ggtggcagga attggaggag 1140
 274 ttcggta cttc caattgataa cggttgcaca cccgaattgt gggattgaa agggaaagcg 1200
 275 ataggacatt acactcagat ggcctggat cgtacttacc gtcttggtt tggaatcgca 1260
 276 aactgtccga agatgtcgta cgtggttgt cactatggc cagcaggcaa cagaaagaac 1320
 277 aataaaatct atgaaatcgg ggatccttc gaagtcgatg atgattgccc gattggaaca 1380
 278 gattgtgaaa agacaacttc ttatgtgtg atctcaaaat aa 1422
 281 <210> SEQ ID NO: 5
 282 <211> LENGTH: 218
 283 <212> TYPE: PRT
 284 <213> ORGANISM: Artificial Sequence
 285 <220> FEATURE:
 286 <223> OTHER INFORMATION: Description of Artificial Sequence: Clustal W
 Alignment of VAP-1, VAP-2, and Selected Other
 Nematode VA Proteins.
 287 <400> SEQUENCE: 5
 288 Met Phe Ser Pro Val Ile Val Ser Val Ile Phe Thr Ile Ala Phe Cys
 289 1 5 10 15
 290 Asp Ala Ser Pro Ala Arg Asp Gly Phe Gly Cys Ser Asn Ser Gly Ile
 291 20 25 30
 292 Thr Asp Lys Asp Arg Gln Ala Phe Leu Asp Phe His Asn Asn Ala Arg
 293 35 40 45
 294 Arg Arg Val Ala Lys Gly Val Glu Asp Ser Asn Ser Gly Lys Leu Asn
 295 50 55 60
 296 Pro Ala Lys Asn Met Tyr Lys Leu Ser Trp Asp Cys Ala Met Glu Gln
 297 65 70 75 80
 298 Gln Leu Gln Asp Ala Ile Gln Ser Cys Pro Ser Ala Phe Ala Gly Ile
 299 85 90 95
 300 Gln Gly Val Ala Gln Asn Val Met Ser Trp Ser Ser Ser Gly Gly Phe
 301 100 105 110
 302 Pro Asp Pro Ser Val Lys Ile Glu Gln Thr Leu Ser Gly Trp Trp Ser
 303 115 120 125
 304 Gly Ala Lys Lys Asn Gly Val Gly Pro Asp Asn Lys Tyr Asn Gly Gly
 305 130 135 140
 306 Gly Leu Phe Ala Phe Ser Asn Met Val Tyr Ser Glu Thr Thr Lys Leu
 307 145 150 155 160
 308 Gly Cys Ala Tyr Lys Val Cys Gly Thr Lys Leu Ala Val Ser Cys Ile
 309 165 170 175
 310 Tyr Asn Gly Val Gly Tyr Ile Thr Asn Gln Pro Met Trp Glu Thr Gly
 311 180 185 190
 312 Gln Ala Cys Lys Thr Gly Ala Asp Cys Ser Thr Tyr Lys Asn Ser Gly
 313 195 200 205
 314 Cys Glu Asp Gly Leu Cys Thr Lys Gly Pro
 315 210 215
 316 <210> SEQ ID NO: 6

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/051,644C

DATE: 10/01/2004

TIME: 11:08:16

Input Set : A:\Cam-0121.app

Output Set: N:\CRF4\10012004\J051644C.raw